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IS 3796 (2011): SPICES AND CONDIMENTS — FENNEL SEEDS, WHOLE
- SPECIFICATION [FAD 9: Spices and Condiments]



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“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
मिर्च एवं मसाले — सौंफ, साबुत — विशिष्टि
(दूसरा पुनरीक्षण)

Indian Standard
SPICES AND CONDIMENTS — FENNEL SEEDS,
WHOLE — SPECIFICATION
(*Second Revision*)

ICS 67.220.10

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Spices and Condiments Sectional Committee had been approved by the Food and Agriculture Division Council.

Fennel seeds, commonly known as *SAUNF* are one of the spices exported from India. A sizable quantity of these seeds is exported to some of the European and Middle Eastern countries. They are also known to be extensively used within the country for culinary purposes and for preparing indigenous medicines, essences, etc.

This standard was originally published in 1966 and first revised in 1993 for upgrading the requirements in line with ISO Standard on the subject, ISO 7927-1 : 1987 'Fennel seed, whole or ground (powdered) — Part 1: Bitter fennel seed (*Foeniculum vulgare* P. Miller var. *vulgare*) — Specification' and also incorporating the requirements for extraneous matter. In this revision, the requirements have been updated to align with the standards for fennel seeds, whole, laid down under the *Prevention of Food Adulteration Rules*, 1955. The categorization of fennel seeds, whole, into three grades has been removed and only a single specification has been prescribed for fennel seeds, whole, in this revision.

Due consideration has also been given to the *Prevention of Food Adulteration Rules*, 1955 and *Standard of Weights and Measures (Packaged Commodities) Rules*, 1977. However, this standard is subject to restrictions imposed under these rules, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

**SPICES AND CONDIMENTS — FENNEL SEEDS,
WHOLE — SPECIFICATION**

(Second Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for dried fruits (seeds) of fennel (*Foeniculum vulgare* Mill) in whole form.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
1070 : 1992	Reagent grade water (<i>third revision</i>)
1797 : 1985	Methods of test for spices and condiments (<i>second revision</i>)
5887 (Part 3) : 1999/ISO	Methods for detection of bacteria responsible for food poisoning: Part 3
6579 : 1993	General guidance on methods for the detection of <i>Salmonella</i> (<i>second revision</i>)
13145 : 1993	Spices and condiments — Methods of sampling (<i>first revision</i>)
14216 : 1994	Code for hygienic conditions for spices and condiments processing units

3 DESCRIPTION

The fennel seeds, whole shall be the dried fruits (seeds) of *Foeniculum vulgare* Mill. Seeds shall be yellowish green to dark green in colour, and shall have the characteristic size and shape of type or variety. The seeds shall be reasonably dry.

4 REQUIREMENTS**4.1 Odour and Flavour**

The odour and flavour of fennel seeds, whole shall be fresh and characteristic of the type and variety. The material shall be free from foreign taste and flavour as

well as from any musty odour. It shall be free from added colouring matter.

4.2 Freedom from Moulds and Insects

Fennel seeds, whole shall be free from living insects and moulds, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds $\times 10$, this fact shall be stated in the test report. The proportion of insect damaged matter shall not exceed 1 percent (*m/m*).

4.3 Extraneous Matter

Inorganic extraneous matter includes dust, stones, earth or any other inorganic foreign matter. Organic extraneous matter includes straw or chaff, stalks, stems, seeds from other plants and any other organic foreign matter, whether or not originating from other parts of the plant.

The proportion of inorganic and organic extraneous matter in fennel seeds, whole, when determined by the method specified in 4 of IS 1797, shall not exceed 2 percent (*m/m*).

4.4 Defective Seeds

Defective seeds include,

- a) seeds which are damaged, split, broken or which have been bored or attacked by weevils or other insects; and
- b) seeds which have not developed properly or which are shrivelled or have been discoloured or blackened.

The proportion of defective seeds in fennel seeds, whole when determined by physical separation and weighing, shall not exceed 5 percent (*m/m*).

4.5 Fennel seeds, whole shall also conform to the requirements given in Table 1.

4.6 Fennel seeds, whole shall be manufactured and packed under hygienic conditions (*see* IS 14216).

Table 1 Requirements for Fennel Seeds, Whole
(Clause 4.5)

Sl No. (1)	Characteristics (2)	Requirements (3)	Method of Test, Ref to (4)
i)	Moisture content, percent by mass, <i>Max</i>	10.0	9 of IS 1797
ii)	Total ash on dry basis, percent by mass, <i>Max</i>	10.0	6 of IS 1797
iii)	Acid insoluble ash on dry basis, percent by mass, <i>Max</i>	2.0	8 of IS 1797
iv)	Volatile oil content on dry basis, percent by mass, <i>Min</i>	1.0	15 of IS 1797
v)	<i>Salmonella</i> , in 25 g	Absent	IS 5887 (Part 3)
vi)	Edible seeds other than fennel, percent by mass, <i>Max</i>	Absent	Physical separation and weighing

4.7 Pesticide residues and metallic contaminants in the product shall not exceed the limits as prescribed in the *Prevention of Food Adulteration Act, 1954* and the Rules made thereunder.

5 PACKING AND MARKING

5.1 Packing

Fennel seeds, whole shall be packed in clean, sound and dry container made of metal, glass, food grade polymers, wood or jute bags. The wooden boxes or jute bags shall be suitably lined with moisture-proof lining which does not impart any foreign smell to the product. The packing material shall be free from any fungal or insect infestation and should not impart any foreign smell. Each container shall be securely closed and sealed.

5.2 Marking

The following particulars shall be legibly and indelibly marked or labelled on each container of fennel seeds, whole:

- Name of the material, trade-name or brand name, if any;
- Name and address of the manufacturer/packer;

- Batch or Code number;
- Net mass;
- Date of packing;
- Year of harvest;
- Best before (month/year); and
- Any other marking as required under the *Standards of Weights and Measures (Packaged Commodities) Rules, 1977* and the *Prevention of Food Adulteration Rules, 1955*.

6 SAMPLING

Representative samples of the material shall be drawn and tested for conformity to this standard as prescribed in IS 13145.

7 METHODS OF TEST

The samples of fennel seeds, whole shall be tested for ascertaining conformity of the material to the requirements in accordance with the relevant clauses given in col 4 of Table 1.

8 QUALITY OF REAGENTS

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which effect the results of analysis.

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Amendments Issued Since Publication

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